



## WyreStorm Display Receiver Solutions

RX-70-PP

Low Profile 70m/230ft HDBaseT™ Display  
Receiver with Bidirectional IR Control & RS232

## Instruction Manual



Thank you for choosing this WyreStorm product.  
Please read these instructions carefully before installing to avoid complications later.

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## 1. Introduction

### Thin is the new thick.

As part of the WyreStorm Pro Plus range, the slim-line RX-70-PP Display Receiver offers HDBaseT Class B distribution when connected to a WyreStorm HDBaseT transmission device such as matrix switcher, transmitter or AMP-001-010 digital audio amplifier.

Supporting a feature set including 70m/230ft transmissions of Full HD 1080p@60Hz video with 36bit deep color, HD audio and discrete bidirectional IR control IR, the RX-70-PP also features RS232 with switchable selection for firmware updates or third party control serial control, all along a single Cat5e/6 cable to display devices.

Pushing chassis design to the limit, the RX-70-PP offers an incredibly low-profile for a greatly reduced form factor behind the screen for even more convenience and ease of installation at the display zone.

Featuring threaded bushings that allow use of both standard and locking DC power plugs for improved connection options, the RX-70-PP also includes LED indication for power supply, signal status to show established connection to display, transmission link and HDCP confirmation to illustrate the presence of encryption within a signal.

WyreStorm Pro Plus HDBaseT products offer flexibility combined with an ease of use and cost-efficiency to provide solutions where reliable HD transmission and control over distance is required whether in a residential or commercial setting.

For further information on this product and other WyreStorm ranges, visit our website or download our latest product guide. **[www.wyrestorm.com](http://www.wyrestorm.com)**

## 2. Features

- Display Receivers capable of 1080p HD video @60Hz and HD multichannel audio transmissions up to 70m/230ft under perfect conditions\*
- Low profile chassis of 15mm / 0.59" for easier, more convenient installations behind screens at display zones.
- Transmits discrete wide-band two-way IR control signal together within the HDMI signal over a single Cat5e/6.
- Robust Class B HDBaseT transmission technology for more affordable HD distribution and control whilst retaining the trademark HDBaseT stability and resistance to electrostatic and environmental interference compared to conventional UTP transmission.
- Supports all high definition resolutions: 1080p, 1080i, 720p with screen refresh rates of 24Hz, 30Hz, 50Hz and 60Hz.
- HDMI v1.4 with full 3D compatibility with frame packing/ sequential (Blu-Ray) and interlaced stereoscopic (satellite/ cable broadcasts)
- Central RS232 compatible - switchable RS232 for firmware updates or third party control with open source integration protocols available for market leading control systems - check website for listing
- Receivers cascable up to 7 times within a single output zone (7 x 70m/230ft) using another Class B HDBaseT transmission device.
- Fully supports 3D applications (frame-packing/ sequential – Blu-ray and Interlaced Stereoscopic – Satellite/cable broadcasts)
- Supports 36bit Deep Colour
- Cable termination follows IEEE-568B standards
- HDCP compliant
- Automatically adjusts feedback, equalization and amplification of signal for easy installation.
- Threaded bushings on receivers allow use of both standard and locking DC power plugs
- LED indication for visual power supply to receiver, signal status to show established connection to display, HDBaseT link to matrix and HDCP confirmation to illustrate the presence of encryption within a signal

**\*Perfect transmission conditions - cable run within specified distance range of product, no electrical interference, the use of straight cable runs with no bends or kinks and no patch panels or wall outlets used. Please be advised that the presence of any of these factors in your installation may compromise bandwidth and signal strength.**

For longer transmission distance, Ethernet pass-through, to enable devices with 4k resolution or for 48bit Deep Colour compatibility, please see our range of full HDBaseT receivers and extender sets.

## 3. Safety Precautions



### WARNING

To reduce the risk of fire, electric shock or product damage:

1. Do not expose this apparatus to rain, moisture, sprays, drips or splashes and ensure that no objects containing liquids are placed on the apparatus, including cups, glasses and vases.
2. Do not place this unit in a confined space such as enclosed shelving, cabinets or bookshelves. Ensure the unit is adequately ventilated.
3. To prevent the risk of electric shock or fire hazard due to overheating, do not cover the unit or obstruct ventilation openings with material, newspaper, cardboard or anything that may restrict airflow into the unit.
4. Do not install near external heat sources such as radiators, heat registers, boilers or any device that produces heat such as amplifiers or computers and do not place near sources of naked flame.
5. Unplug apparatus from power supply during lightening storms or when unused for long periods of time.
6. Protect the power cable from being walked on, pinched or restricted in any way, especially at plug connections.
7. Only use attachments/accessories specified by the manufacturer.
8. Units contain non-servicable parts - Refer all servicing to qualified service personnel.

## 4. Package Contents

- 1 x WyreStorm RX-70-PP Display Receiver
- 1 x Receiver mounting brackets (pair)
- 1 x 12V/1.5A DC power supply
- 1 x Wide-band IR TX Emitter
- 1 x Wide-band IR RX Receiver (30-50KHz)
- 1 x 3.5mm Phoenix male Connector (3 pin)

\*Digital manual downloadable from

**[www.wyrestorm.com](http://www.wyrestorm.com)**

## 5. Specifications

Operating Temperature Range	32°F to 95°F (0°C to 35°C) 10% to 90%, non-condensing
Operating Humidity Range	Storage Temperature -4°F to 140°F (-20°C to 70°C) 10% to 90%, non-condensing
Input	1 x HDBT IN
Input Signal Type	HDBT 2.0
Bandwith Signalling Rate	6.75Gbps
Input Resolution Support	1080p/1080i/720p/576p/480p/576i/480i
Input Video Signal	0.5 - 1.2 V p-p
Input DDC Signal	5 volts p-p (TTL)
Output	1 x HDMI OUT
Output Signal Type	HDMI v1.4 with full 3D compatibility with frame packing/ sequential (Blu-ray) and interlaced stereoscopic (satellite/cable broadcasts)
Output Resolution Support	1080p/1080i/720p/576p/480p/576i/480i
Video Format Supported	VESA: 640x480, 800x600, 1024x768, 1280x1024, 1600x1200, 1920x1080 1920x1200  DTV/HDTV: 480i/567i/480p/567p/720p/1080i/1080p
Audio Format Supported	DTS-HD, Dolby True HD
Video Impedance	100 Ω
Maximum Pixel Clock	148.5 MHz (1080p)
Power Supply	12V/1.5A DC
Power Consumption	7.6 Watts (Each)
BTU Rating (British Thermal Unit)	25.9
ESD Protection	±8kV (Air-gap discharge) ±4kV (Contact discharge)
Surge Protection	IEC 61000-4-4 (EFT) 40A (5/50ns); IEC 61000-4-5 (Lightning) 25A (8/20µs)
Cat5e/6 Cable Specifications	70m/230ft: 1080p, 60Hz, 36bit deep colour 35m/114: 1080p, 60Hz, 48bit deep colour / 1080p, 60Hz, 3D  <b>Note: HDBaseT certified, straight-through T568B standard cables strongly recommended</b>
Dimensions	135mm / 5.3" (W) 15mm / 0.6" (H) 74mm / 2.9" (D)
Weight	240g / 8.46oz

## 6. Panel Description

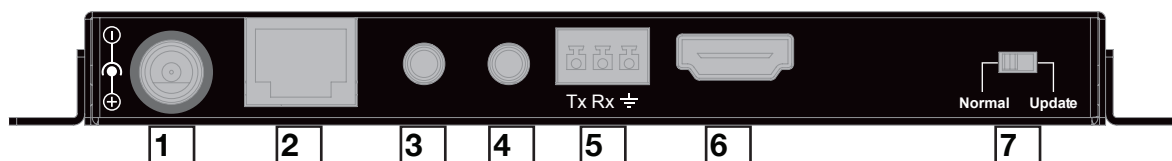
### Front

- 1** Mounting Brackets
- 2** Power LED indication - Lit for receiver powered
- 3** Status LED indication - Blinking to show established connection to display
- 4** Link LED indication
  - i. Lit to show link between receiver and HDBaseT transmission device
  - ii. Off/blinking suggests possible link issue between HDBaseT devices
- 5** HDCP LED indication
  - i. Lit to confirm HDCP encrypted video being transmitted
  - ii. Off/blinking no HDCP encrypted video being transmitted

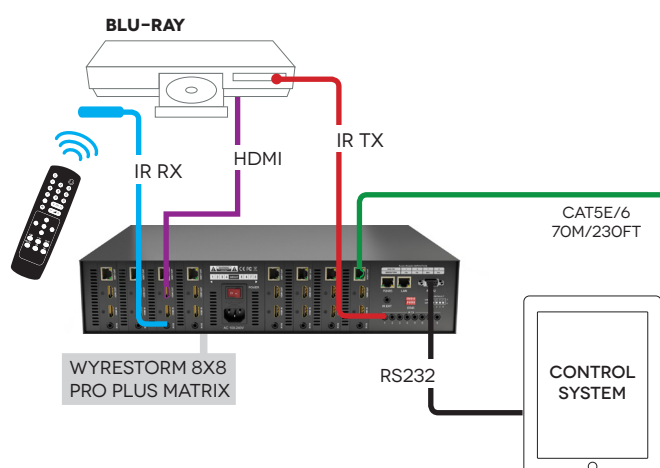


### Rear

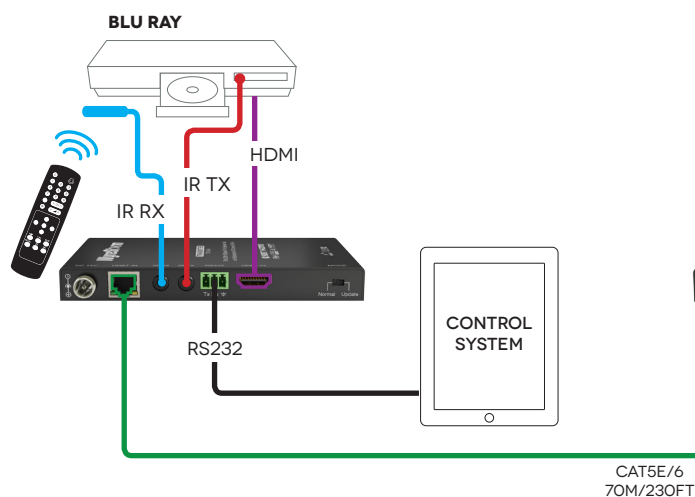
- 1** 12VDC lockable power input - connects standard and locking DC power plugs
- 2** HDBaseT Input - connects to a compatible HDBaseT transmission device via Cat5e/6 cable
- 3** IR RX - connects to supplied IR Receiver
- 4** IR TX - connects to supplied IR Emitter
- 5** RS232 - for update or control system connection
- 6** HDMI Output to display
- 7** RS232 Mode select - toggle between Control (Normal) and firmware (Update)



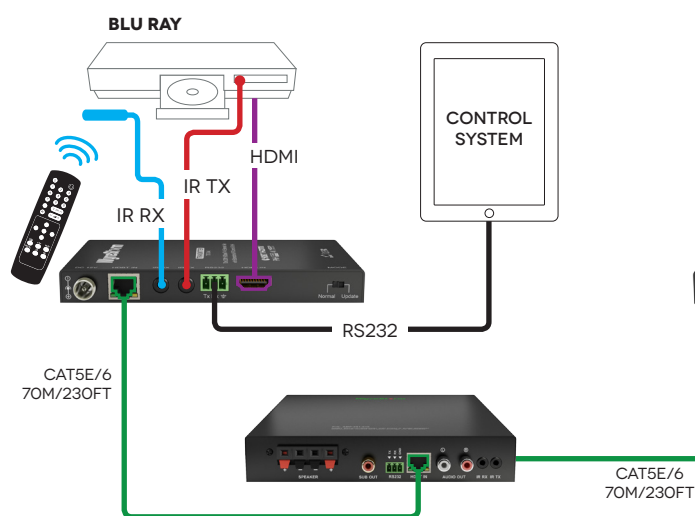
## 7i. Typical Application



Pro Plus matrix as HDBaseT Transmission Device

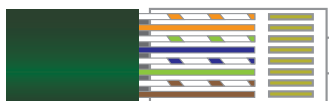


HDBaseT Transmitter as Transmission Device



AMP-001-010 Digital Audio Amplifier  
HDBaseT Transmission Device

## 7ii. RJ45 Termination and Cat5e/6 Cable Distance



### Cat5e Wiring Guide

The quality of termination for every RJ45 is

essential. Poor terminations leads to intermittent performance and longer install times.

### Cat5e/6 Cable Performance Guide

RX-70-PP

0m	10m	20m	30m	40m	50m	60m	70m	80m	90m	100m
0ft	32ft	65ft	98ft	131ft	164ft	197ft	230ft	262ft	295ft	328ft

## 7iii. Initial Connection

**1** Firmly connect an HDMI input (such as Blu-Ray, games console, satellite/cable, media server etc.) to a HDBaseT transmission device (such as a WyreStorm HDBaseT transmitter, AMP-001-010 digital amplifier or Pro Plus matrix solution.)

**2** Connect a good quality, well terminated Cat5e/6 cable of no more than 70m/230ft in length between the UTP/HDBaseT output of the transmission device to the HDBT IN of the RX-70-PP

**Attention** 70m/230ft is the maximum recommended transmission distance for this classification of HDBaseT equipment and denotes perfect transmission conditions - including straight cable runs with no electrical interference, bends, kinks, patch panels or wall outlets. If any of the above are a factor in your installation, transmission range may be affected – take care to avoid where possible.

**3** Connect the HDMI sink (LED /Plasma display / digital projector) to the HDMI OUT of the RX-70-PP receiver.

**NOTE** We strongly recommend using the supplied mounting brackets to secure the receiver. Any sudden movement of devices can lead to loss of picture/sound if connections become loose or strained, resulting in unnecessary service call backs.

**4** If daisy-chaining receivers, repeat process for all RX-70-PP units installed from your transmission devices.

## 7iv. IR/RS232 Control Connection

**1** For two way control of connected sources and displays from either location, connect IR transmitters to the IR TX ports of the HDBaseT Transmitter devices and RX-70-PP.

**2** Insert IR receivers into IR RX ports of the HDBaseT Receiver devices and matrix.

**3** If using an RS232-based control system, insert cables into the RS232 ports of devices to enable RS232 control.

**4** Ensure IR TX transmitters are firmly attached over IR sensors of devices to be controlled.

**NOTE** If unsure of positioning, IR sensors can be located on devices by shining a flashlight onto the face of the device - the IR sensor should be identifiable as a small round sensor behind the panel. Consult your device manufacturer handbook if difficulties are experienced.

**5** Ensure IR RX receivers are positioned in clear line of sight to the remote handset used to control them.

**NOTE** For serial control via the RS232 port on the RX-70-PP please ensure the **MODE** switch is set to **Normal**. The **Update** setting is reserved for firmware updates.

## 7v. Update RS232 Settings

- 1** Move the MODE switch to the Update setting for the receiver to enter Firmware Update Mode
- 2** Connect a Serial-to-USB cable from the RS232 port of the RX-70-PP to a computer and run VS010 RX Firmware Update batch file.
- 3** Once the update has been completed, be sure to return the MODE switch to the Normal position for RS232 control signal transmission to be passed.

**NOTE** Connect RS232 cables to the RS232 port of the Receiver to form one extension cable.

## 8. Understanding RS232 Connection & Signals

RS-232C, EIA RS-232, or simply RS-232, refers to the same standard defined by the Electronic Industries Association in 1969 for serial communication.

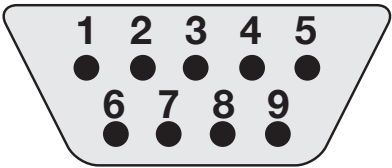
### DTE and DCE

DTE stands for Data Terminal Equipment. A computer or control system is DTE and connects to Data Communication Equipment, or DCE such as an Amp, Matrix or Modem.

DTE equipment typically feature a Male Connector, while DCE contains a Female Connector, although that is not always true - a simple way to confirm is to measure Pin 3 and Pin 5 of a DB-9 Connector with a Volt Meter. If a voltage of -3V to -15V is achieved, the device is DTE. If the voltage is on Pin 2, then the device is DCE.

**NOTE:** The result for a DB-25 Connector is reversed (Please refer to DB-9 to DB-25 conversion table)

### RS-232 Pin outs (DB-9)



A male DB-9 connector viewed from the front. Reverse or back view of male connector for Female Connector.

### DB-9 to DB-25 Conversion

DB-9	DB-25	Function
1	8	DCD Data Carrier Detect
2	3	RxD Receive Data
3	2	TxD Transmit Data
4	20	DTR Data Terminal Ready
5	7	GND Ground (Signal)
6	6	DSR Data Set Ready
7	4	RTS Request to Send
8	5	CTS Clear to Send
9	22	RI Ring Indicator



**DTE Pin Assignment (DB-9)**

1	DCD	Data Carrier Detect
2	RxD	Receive Data
3	TxD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground (Signal)
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	Ring Indicator

**DCE Pin Assignment (DB-9)**

1	DCD	Data Carrier Detect
2	TxD	Transmit Data
3	RxD	Receive Data
4	DSR	Data Set Ready
5	GND	Ground (Signal)
6	DTR	Data Terminal Ready
7	CTS	Clear to Send
8	RTS	Request to Send
9	RI	Ring Indicator

**RS232 Connections**

A straight-through cable should be used to connect a DTE (e.g. computer) to a DCE (e.g. Amp, Matrix or Modem), with all signals from one side connected to the corresponding signals on the other side in a one-to-one basis.

A crossover (null-modem) cable can be used to connect two DTE directly, without a modem in between to cross transmit and receive data signals between the two sides. There are numerous variations on how control signals are wired:

**Straight-through (DB-9)**

(DTE)			(DCE)	
1	DCD	-----	DCD	1
2	RxD	-----	TxD	2
3	TxD	-----	RxD	3
4	DTR	-----	DSR	4
5	GND	-----	GND	5
6	DSR	-----	DTR	6
7	RTS	-----	CTS	7
8	CTS	-----	RTS	8
9	RI	-----	RI	9

**Crossover (Null-Modem) (DB-9)**

(DTE)			(DCE)	
1	DCD	-----	DCD	1
2	RxD	-----	TxD	3
3	TxD	-----	RxD	2
4	DTR	-----	DSR	6
5	GND	-----	GND	5
6	DSR	-----	DTR	4
7	RTS	-----	CTS	8
8	CTS	-----	RTS	7
9	RI	-----	RI	9

**RS232 Logic Waveform (8N1)**

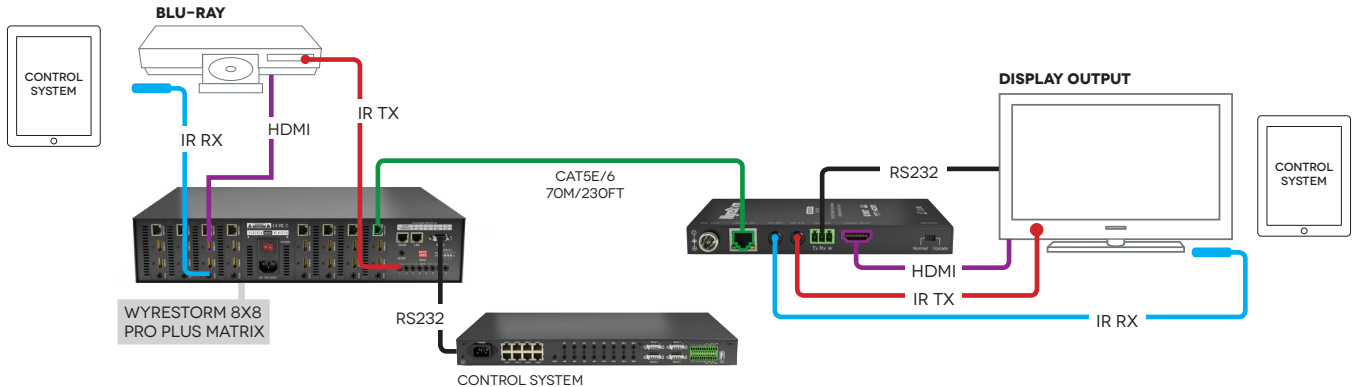
The graphic (p.8 bottom left) illustrates a typical RS232 logic waveform (Data format: 1 Start bit, 8 Data bits, No Parity, 1 Stop bit). The data transmission starts with a Start bit, followed by the data bits (LSB sent first and MSB sent last), and ends with a "Stop" bit.

The voltage of Logic "1" (Mark) is between -3VDC to -15VDC, while the Logic "0" (Space) is between +3VDC to +15VDC.

RS232 connects the Ground of 2 different devices together, which is the so-called "Unbalanced" connection. An unbalanced connection is more susceptible to noise, and has a distance limitation of 15m/49ft.

## 9. RS232 Connection

To allow serial commands sent from transmitting device to be sent to display device, simply connect a straight-through RS232 cable between the RX-70-PP and your display.



## 10. Troubleshooting

Generally, the majority of HD distribution installation issues are either caused by minor connection errors, communication problems between devices, or when the transmission of high signal bandwidth is attempted using insufficient cable. Should you encounter any technical difficulties when installing and configuring the matrix, we are confident solutions can be found by working through the following troubleshooting checklist before seeking alternative technical support.

### No Picture or Poor Quality Picture

**1) Power** – is your HDBaseT transmission device and RX-70-PP receiver powered with correct LED indication? All units should have their own power source connected ie. 12v for most 70m/230ft for HDBaseT devices – Please use power supplies included.

Are all sources definitely powered and firmly connected?

**2)** If possible, always use test equipment prior to installation and to troubleshoot any problems.

**3)** Check sink device supports HDCP, is switched to the correct source input mode and is compatible with the receiver - if any issue is suspected, replace sink device with another model.



**4) Distance** – Is the cable too long for the signal to be transmitted effectively? The HDBaseT classification used within the transmitters and receivers allow transmission of 1080p up to 70m/230ft so make sure the cable distance matches the project requirements and is well within the maximum transmission distance of the signal.

**Note:** If approaching the limits of the transmission capabilities, transmission should be extended by using another extender set to ensure the signal reaches its destination effectively.

**5) Cable Joins** – Joins in the cable run or RJ45 connectors can impact on signal strength, resulting in reduced transmission that may manifest itself in incorrect picture quality, picture dropping out or a complete lack of picture

**6) Cable Choice and Signal Reduction** – Are stranded patch leads being used as interconnects between patch panels or wall outlets? CCA (Copper Clad aluminium)

cables being used? These can reduce transmission rates by up to 40% – we recommend solid core straight through with minimum connections used wherever possible.

**7) Correct connection** – It may seem obvious but double check all UTP, HDMI, power and IR cables are connected to the correct ports.

**Note:** Even a fraction off can be the difference between a perfect picture and a blank screen. Double check all connections are firmly made in the correct ports.

**8) Cable wired to 568B standard?** Is the cable wired and terminated correctly and are those terminations connected to the correct ports? Incorrect wiring and termination will result in unstable operation or a blank screen.

**9) Electrical interference** – HDBaseT is less susceptible to interference compared to regular transmissions but the location of cables and devices should be considered - could any form of interference be generated? If so, attempt to remove the source of electrical interference or move the cable run to decrease the effects of the interference.

**10) Is a picture achieved when connecting the source directly to the display?** If not then the problem could lie with the input or output device rather than the means of distribution i.e. the cable, receiver or matrix itself.

**11) HDMI lead condition and quality** – HDMI cables and connectors are delicate and can be damaged much easier than component or coax cable. Furthermore, lead quality varies dramatically, particularly in lower price brackets. Swap HDMI leads and check operation – damage to or quality of your leads could be the problem. If in doubt, swap them over. Always take care inserting and extracting your HDMI from matrix ports so as not to damage the connectors or ports.

**12) Picture speckles/HD 'noise'** – represents a poorly established signal that may be caused by poor quality or excessive HDMI cable lengths. Try swapping the display adaptors from a location that is functioning properly or swapping the outputs of the matrix switch used. If the problem remains on the same screen this may be caused by a connection problem between matrix and display – turn off all equipment and swap the signal carrying cables at both ends to ascertain if the cable or termination is at fault.

**HD Noise (NO image)** may be an HDCP Issue between the source and display but poor cabling can also cause this due to poor communication.

**13) Blu-ray: 3D** – is the equipment used 3D enabled/compatible? Is a 3D disc being played in a 3D enabled Blu-ray player or through a compatible AV receiver?

**14) Colour distortion** – a pink or green screen indicates an incompatibility between colour spacing formats – the commonly used RGB or YUV used by older displays. Some sources allow switching between RGB and YUV which may solve any colour problems. If not, try changing the HDMI cable between the source and the matrix to rule out defective cabling.

## No Sound or Poor Quality Audio

Audio is transmitted within the video signal – there is no separate audio track – so generally a problem with sound will be accompanied by a problem with picture. However, if technical issues with audio are experienced, the cause is typically communication between sources, displays and/or AV receiver settings.

**1) Have specific speaker sets or zones been enabled?** Some AV receivers allow individual speaker selections assigned to specific zones in the set up so check the speakers used are fully connected to the amplifier and correctly assigned within the system set up. It may be an EDID issue in that the source reads the audio EDID from the display and only requests two channel audio and EDID copy from the AVR may be required or use an embedded EDID in the AMP or Matrix.

**Note:** If problems are experienced when an AV receiver is used, the cause is usually the settings of the AVR itself. Refer to the AVR manufacturer's guidelines on the correct settings to use for your requirements.

**2) Consistency of audio output between devices** – Is there any discrepancy between the audio output of the source, the audio or zonal settings of the AV receiver and the speaker configuration used needed for successful audio replication? If outputting 7.1, make sure all devices connected are also outputting 7.1

**Note:** Occasionally with some sources, the device settings allow the specification of audio output through a TV or an HDMI port. If using an AV receiver, check the HDMI output option is selected.

### 3) Do all the local sources work through the AV receiver?

Check the operation of each source individually.

### Bandwidth

1) If using a graphics-based source (such as a PC/Mac/ media server), make sure the source resolution is set to a maximum of 1080p, 50Hz. Higher resolutions available for graphics-based systems require higher bandwidth that may affect transmission of signals as well as incompatibility with devices.

### IR

1) **Check emitters at the IR TX transmitter end and receivers at the IR RX receiver end** – are they connected to the correct ports on the matrix and display receiver.

### 2) Is the emitter correctly positioned on the source?

Fix the emitter directly over the infrared sensor of the source and attach using the adhesive backing.

Note: Locate the infrared source sensor by using a flashlight to find the sensor within the fascia of the source display. If necessary, secure the emitter over the sensor with a small amount of contact adhesive.

### 3) Is the remote handset powered and sending a signal?

**Note:** IR is invisible to the naked eye, so use a digital camera/ phone camera to check the remote signal – point the camera at the remote control when pressing a button. The remote transmitter can be seen flashing to indicate a signal being sent. Replace batteries if flashing is not seen on the digital camera screen.

4) IR dropout issues can be due to exterior influences emitting infrared radiation that can interrupt IR signals. Ensure emitters and receivers are away from the following causes of IR interference.

- Direct sunlight, Fluorescent lighting (on cold start up)
- Halogen lighting
- Plasma screens

5) UTP Termination Issues – ensure cables and RJ45 terminations are correct and in good condition at both transmitter and receiver ends to see if control is established. If so, a possible re-termination of the cable could remedy the problem.

6) Are WyreStorm emitters and receivers being used?

The use of third party products/magic eyes may not be compatible. Always use WyreStorm components included with your purchase or check compatibility of third party control systems with your WyreStorm dealer.

7) If problems persist, swap out the IR emitters and receivers to rule out faults with the units themselves. Use emitters you know are fully operational to test working condition.

8) Reactivate the IR call-back function on your matrix and swap IR ports on the matrix to rule out a fault with the matrix or connection ports.

9) Should IR remain unresponsive, turn off and disconnect all cables from the matrix and reconnect zones one at a time to assess if one location in particular is the problem. If so, run new cables directly to the display – if this fixes the problem, it is likely that electromagnetic interference / damage to the cable somewhere along the run is causing the IR signal to drop out. Investigate and remove EM interference from the run or replace damaged UTP cable.

## 11. FAQs

### Cat5e or 6?

While our equipment is tested and graded to Cat 5e cable standard; tests have shown that better results are achieved when using Cat6 cable. The lower AWG (American Wire Gauge) uses thicker copper cores ensure better signal transfer/Transmission rates. Newly installed cabling should always conform to Part P Regulation and BS 7671 (17th Edition), and should be terminated to 568B standard.

### Can I use a single Cat 5e/Cat 6 cable?

Although conventional transmission used to be considered two Cat5e cables for video, audio and control, HDBaseT transmission only requires a single cable.

All features found with dual cable transmissions are supported with HDBaseT, with addition of RS232 serial control, Power and Ethernet passed along a single Cat5e/6/7, depending on feature set/model of product

### How far can the signal travel?

Under perfect transmission conditions WyreStorm HDBaseT receivers will operate at 50m, 70m or 100m (@1080p) depending on the model used.

Perfect conditions denotes no electrical interference, straight cable runs with no bends or kinks and no patch

panels or wall outlets. If some of the above are factors in your installation then signal strength and bandwidth can be compromised.

Should a cable run approach the upper limit of the receiver capabilities, the signal can be boosted by connecting to an HDBaseT AMP-001-010 digital audio amplifier/receiver act as an in-line repeater up to 7 times up to 490m/1607ft.

### **What about 3D?**

The RX-70-PP, all of our matrix switches and the majority of our extender products will pass-through a 3D Blu-ray signal.

### **How do I control the sources?**

All of our HDMI distribution products support IR pass-through from point-to-point extender sets to AMP and HDBaseT matrices. Most of the range now supports wideband IR meaning it is compatible with any IR device available on the market. Our PP and HDBaseT matrix range (Cat 5e/Cat6) has IR pass-through from each of the outputs and has discrete IR outputs at the switch end, meaning you can have multiple identical sources yet the IR would be routed only to the applicable source.

### **Do I need power at the TV end?**

Yes. This product requires its own 12v local/mains power at display zones to operate.

WyreStorm PoH enabled devices require no power supply at the TV end by drawing power from a PoH matrix or PoH transmitter. See [www.wyrestorm.com](http://www.wyrestorm.com) for details on our PoH range.

### **Are WyreStorm products compatible with HDMI 1.4?**

HDMI 1.4 refers to a list of 'features' that a device is capable of supporting, including Ethernet channel, return audio channel, 3D etc. Due to the continuously evolving nature of the technology, HDMI Licensing LLC have now decided to simplify terminology by testing and referring to cable in terms of STANDARD or HIGH-SPEED rather than in generations 1.3, 1.4 etc.

- STANDARD (or "category 1") HDMI cables perform at speeds of 75Mhz or up to 6.75Gbps, which is the equivalent to a 720p/1080i signal – These HDMI cables are NOT recommended.
- All WyreStorm equipment support HIGH-SPEED (or "category 2") HDMI cables that have been tested to perform at speeds of 340Mhz or up to 10.2Gbps, which is the highest bandwidth currently utilised over an HDMI cable and can successfully handle 1080p signals including those at increased colour depths and/or increased refresh rates from the Source. High-Speed cables are also able to accommodate higher resolution

displays, such as WQXGA cinema monitors (resolution of 2560 x 1600).

### **What about screens with different resolution capabilities?**

When sending a signal point to point a TV will communicate it's capabilities to the source, then the source will output a suitable signal that compatible (i.e. 1080p Stereo audio). If you were to use a matrix switch with three 1080p screens and one 1080i screen, the resultant image would be 1080i across all screens. The matrix switches do not scale per output but instead negotiate with the source a signal that all screens are capable of supporting.

### **How does the Transmission device handle HDCP?**

HDCP (High Definition Copyright Protection) is a feature built in to HDMI devices to prevent theft of or illegal distribution of HD content. Unlike competing products, WyreStorm equipment are legal and comply with HDCP regulations.

They do this by assigning a "key" to any display connected to the device. HDCP "keys" are assigned to a display when connected to a HDMI device normally. This doesn't change when connecting to an extender, receiver or matrix switch; rather keys are duplicated or more are assigned.

### **I can get 1080i but not 1080p at a TV location**

Firstly ensure that both the source is capable of outputting 1080p and that the TV is Full HD 1080p screen. If this is the case then the AMP, 70 metre receiver or PP Matrix may require EDID management setting up using the DIP switches. This useful feature provides a successful "send and receive" to ensure swift and stable EDID negotiation between the source and display. See Troubleshooting section for more tips on problem solving.

### **I cannot get a signal from my A/V receiver along a Cat 5e extender set**

Check to ensure that the A/V Receiver isn't adding CEC (HDMI Control Protocol) to the outgoing signal, this can sometimes have an effect on the HDMI signal.



## 12. Maintenance

Clean this unit with a soft, dry cloth only. Never use alcohol, paint thinner or other harsh chemicals.

## 13. Product Service

- 1. Damage requiring service:** This unit should be serviced by a qualified service personnel if:
- The DC power supply or AC adaptor has been damaged.
  - Objects or liquid have gotten into the unit.
  - The unit has been exposed to rain.
  - The unit does not operate normally or exhibits a marked change in performance.
  - The unit has been dropped or the cabinet damaged.

**2. Servicing Personnel:** Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorised servicing personnel.

**3. Replacement Parts:** When parts need replacing, ensure parts approved by the manufacturer are used – either those specified by the manufacturer or parts possessing the same characteristics as the original parts. Be aware – unauthorised substitutes may result in fire, electric shock, or other hazards and will invalidate your warranty.

**4. Safety Check:** After repairs or service, ask the service personnel to perform safety checks to confirm the unit is in proper working condition. When shipping the unit, carefully pack and send it prepaid, with adequate insurance and preferably in the original packaging. Please include a document or letter detailing the reason for return and include a daytime telephone number and/or email address where you can be contacted.

## 14. Mail-in-service

If repair is required during the limited warranty period, the purchaser will be required to provide a sales receipt or other proof of purchase, indicating date and location of purchase as well as the price paid for the product. The customer will be charged for the repair of any unit received unless such information is provided.

## 15i. Warranty

Should you feel your product does not function adequately due to defects in materials or workmanship, WyreStorm (referred to as “the warrantor”) will, for the length of the period indicated below (starting from the original date of purchase) either:

- Repair the product with new or refurbished parts. or
- Replace it with a new or refurbished product.

### Limited warranty period:

All WyreStorm products are covered by a 3 year PARTS and LABOUR warranty. During this period there will be no charge for unit repair, replacement of unit components or replacement of product if necessary.

The decision to repair or replace will be made by the warrantor. The purchaser must mail-in the product during the warranty period. This limited warranty only covers the product purchased as new and is extended to the original purchaser only. It is non-transferable to subsequent owners, even during the warranty period. A purchase receipt or other proof of original purchase date is required for the limited warranty service.

## 15ii. Warranty Limits and Exclusions

**1. This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship and DOES NOT COVER normal wear and tear or cosmetic damage.**

The limited warranty also DOES NOT COVER damage that occurs in shipment or failures caused by products not supplied by the warrantor, failures resulting from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, incorrect installation, set-up adjustment, implementation of/to consumer controls, improper maintenance, power line surge, lightening damage, modification, service by anyone other than a manufacturer-approved service centre or factory-authorised personnel, or damage attributable to acts of God.

**2. There are no express warranties except as listed under “limited warranty coverage.” The warrantor**

**is not liable for incidental or consequential damage resulting from the use of this product or arising out of any breach of this warranty.**

For example: damages for lost time, the cost of having a person/persons remove or re-install previously installed equipment, travel to and from service location, loss of or damage to media, images, data or other recorded/stored content. The items listed here are not exclusive, but are for illustration only.

Parts and service not covered by this limited warranty are not the responsibility of the warrantor and should be considered the responsibility of the individual.

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## **17. Installation Notes**

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**WyreStorm Technologies reserve the right to change physical appearance or technical specification of this product at any time.**

**Visit [www.wyrestorm.com](http://www.wyrestorm.com) for the latest information on products..**